

WHAT IS CLAIMED IS:

1                   1. A network performance monitoring system comprising:  
 2                   a plurality of user modules, wherein each user module operates on a unique user machine  
 3                   coupled to one or more provider servers;  
 4                   an experience test server for collecting data from the plurality of user modules, wherein  
 5                   the collected data includes at least one performance datum relating to user  
 6                   experience with a link from the user machine to the provider server; and  
 7                   means for cleansing the collected data to account for variable user configurations.

1                   2. The apparatus of claim 1, wherein the user machines are coupled to the  
 2                   provider servers over dial-up connections.

1                   3. The apparatus of claim 2, further comprising a service level report  
 2                   generator, wherein a service level report generated by the service level report generator is a  
 3                   report indicating the level of service provided to the unique user machines and the level of  
 4                   service is based, at least in part, on the cleansed collected data.

1                   4. The apparatus of claim 1, wherein the means for cleansing is a means for  
 2                   identifying when given data samples with disparate values represent similar samplings due to  
 3                   user configuration variations.

1                   5. The apparatus of claim 4, wherein the data samples represent point-of-  
 2                   presence IDs and the disparate values result from user variations in representations of point-  
 3                   of-presence IDs.

1                   6. The apparatus of claim 4, wherein the data samples are clock times and the  
 2                   disparate values result from user variations in local clocks.

1                   7. The apparatus of claim 1, wherein the experience test server further  
 2                   comprises logic to allocate tests among the plurality of user modules.

1                   8. The apparatus of claim 7, wherein the logic to allocate tests among the  
 2                   plurality of user modules is logic that operates without requiring prior knowledge of the  
 3                   number of user modules available for running tests.

1                   9. The apparatus of claim 7, wherein the logic is logic programmed to  
 2                   allocate tests based on one or more criterion, wherein the one or more criterion are selected

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3 from a test type, matching test parameters, maximum number of tests, test durations and  
4 conditions under which test can be allocated.

1 10. A method of determining a path taken by packets between a source and  
2 destination in a packet-switched network, the method comprising the steps of:  
3 sending out a plurality of test packets, wherein at least two test packets of the plurality of  
4 test packets have differing values for a time-to-live variable;  
5 recording IP addresses to IP devices at which the test packets expired;  
6 sending a recording test packet to each of the IP addresses obtained in the step of  
7 recording, wherein a recording test packet is a test packet that causes an IP device to  
8 record a path of the test packet; and  
9 analyzing the returned results of the recording test packets to determine the path taken  
10 from the packets between the source and the destination.

1 11. A method of measuring network performance in a distributed network  
2 where performance responsibility is allocated among more than one entity, the method  
3 comprising the steps of:  
4 executing tests on the distributed network from a test point;  
5 querying routers to determine router statistics; and  
6 adjusting results of the executed tests based on the router statistics.

1 12. The method of claim 11, where the step of querying is a step of querying  
2 a central console which in turn queries a router.

1 13. In a dial-up network, wherein a client computer connects to a server  
2 computer over dial-up lines, a method of monitoring dial-up processes, comprising the steps  
3 of:  
4 capturing dial-up parameters at the client computer, wherein the dial-up parameters  
5 represent inputs to a dial-in session;  
6 upon activation of a dialer program on the client computer, hooking into the dialer  
7 program to obtain dial-up progress data, wherein the dial-up progress data represents  
8 user experience parameters.

1 14. The method of claim 13, wherein the step of hooking comprises a step of  
2 intercepting function calls.

1 15. The method of claim 14, wherein the step of monitoring is done as a  
2 background process.

Sub B4 1 16. A method of monitoring end-user experience of a plurality of users  
2 operating a plurality of interfaces to a distributed network, wherein each of the plurality of  
3 users is associated with an account on the distributed network and a service level and wherein  
4 compliance with the service level of a user is determined, at least in part, from the monitored  
5 end-user experience, the method comprising the steps of:  
6 detecting when a user invokes connection code to connect a client system to the  
7 distributed network;  
8 when the user invokes the connection code, monitoring the connection code to obtain  
9 user experience data about the connection process, wherein the user experience data  
10 is data relating to the user's experience with the distributed network;  
11 transmitting the data obtained from the connection process to an experience test server,  
12 wherein the experience test server is a collector of user experience test server.

1 17. The method of claim 16, wherein the step of monitoring is done as a  
2 background process.

1 18. A method of monitoring network-based services, comprising the steps of:  
2 configuring client modules to contact an experience test server;  
3 when a client module contacts the experience test server, allocating one or more network  
4 tests to the client module from the experience test server;  
5 performing the one or more network tests using the client module; and  
6 providing the test results to the experience test server from the client module.

Sub B5 1 19. The method of claim 18, further comprising a step of allocating tests to  
2 distribute tests over time and distribute tests over available clients.

1 20. The method of claim 18, further comprising a step of checking test quota  
2 limits associated with a client before instructing the client to run a test.

1 21. The method of claim 18, further comprising a step of dynamically  
2 controlling a rate of test allocation to distribute tests over a test period based on a current test  
3 rate.

22. The method of claim 18, further comprising a step of dynamically changing test allocation without prior knowledge of number of client modules available for testing.

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**Abstract**